

RS-53 (R470A) PHYSICAL PROPERTIES



		RS-53 ⁽²⁾	R410A ⁽²⁾
Molecular Mass		84.43	72.6
Boiling point (1 atm) ⁽¹⁾	^o C	-62.5	-51.4
	^o F	-80.4	-60.5
Critical Temperature	^o C	88.7	71.3
	^o F	191.7	160.4
Critical Pressure	bara	55.91	49.00
	psia	810.9	710.6
Liquid Density (25 ^o C) ⁽¹⁾	kg/m ³	1088	1059
Density of saturated vapour (25 ^o C) ⁽¹⁾	kg/m ³	61.99	64.87
Latent Heat of Vaporisation at boiling point ⁽³⁾	kJ/kg	267.3	273
Heat capacity constant volume Cv (25 ^o C & 1bara)	kJ/kg.K	0.749	0.7000
Heat capacity constant pressure Cp (25 ^o C & 1bara)	kJ/kg.K	0.854	0.823
Cp/Cv (25 ^o C & 1 bara)		1.141	1.1755
Vapour Pressure (25 ^o C) ⁽¹⁾	bara	18.40	16.57
	psia	266.9	240.4
Vapour Viscosity (25 ^o C & 1 bara)	cP	0.0130	0.0133
Liquid Viscosity (25 ^o C) ⁽¹⁾	cP	0.135	0.118
Liquid Thermal Conductivity (25 ^o C)	W/m.K	0.0828	0.0892
Surface Tension (25 ^o C) ⁽¹⁾	N/m	0.00592	0.00521
Specific heat of liquid (25 ^o C) ⁽¹⁾	kJ/kg.K	1.59	1.71
Ozone Depletion Potential	ODP	0	0
Global Warming Potential AR5	GWP	909	1924
Flammability limit in air (1 atm)	vol%	none	none
Inhalation exposure (8 hour day & 40 hour week)	ppm	1000	1000

Notes:

(1) Bubble Point

(2) RS-53 refrigerant properties obtained from NIST's REFPROP v 10 program.

(3) Difference between bubble liquid enthalpy and dew point vapour enthalpy at 1 atm.